




TVE-400/800-1600 H.264 IP Video Encoder User Manual

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Introduction

The TruVision TVE H.264 IP video encoder converts the analog camera streams to compressed IP video streams. These streams are transited to network video recorders (NVR) or video management systems (VMS) for remote storage, live-view and playback purpose.

This user manual provides basic information on setting up and using the TVE-400, TVE-800 and TVE-1600 models.

The encoder is shipped with on-screen display (OSD) menus in English only.

Package contents

The TruVision TVE H.264 IP video encoder is shipped with the following items:

- TVE encoder
- Power adaptor
- Power cable
- Quick start guide
- CD (includes the user manual and TruVision Device Finder)

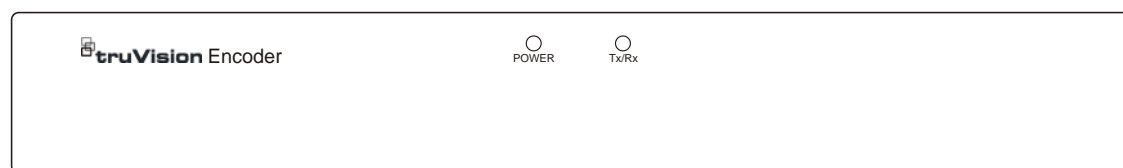
Key features

The following key features are supported by TVE encoders:

- 4/8/16-channel H.264 encoding with dual stream output
- Multiple resolution options: 4CIF, 2CIF, CIF and QCIF
- Support audio & video compounded stream
- Device configurable remote recording on Net HDD
- Flexible and powerful recording mechanism: Scheduled, event triggered, alarm triggered, cycle recording, pre & post recording
- Bi-directional audio
- Local PTZ control via RS-485/422 port and burnt-in multiple PTZ protocols
- 4 alarm in/1 alarm out
- Support ONVIF, PSIA and CGI communication
- Discoverable via the TruVision Discovery Tool

Product description

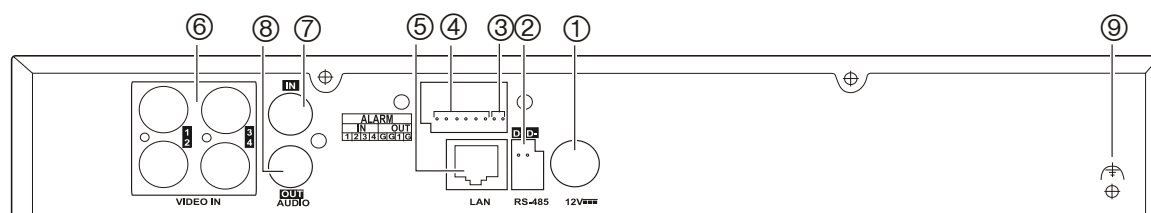
Figure 1: Front panel



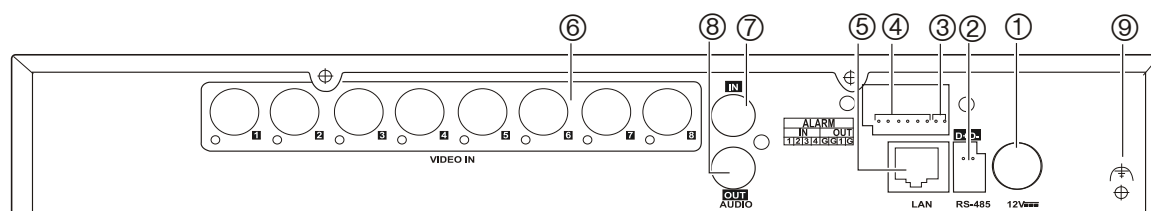
LED	Description
POWER	The LED lights up green when the device is working. It is not lit when the device is powered down.
TX/RX	The LED is not lit when there is no network connection. It lights up green and flashes when data is being transmitted/received. It flashes at a faster rate when a large amount of data is being transmitted or received.

Figure 2: Back panel

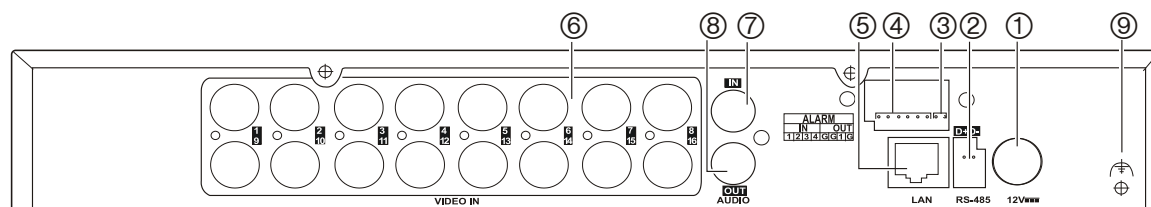
4-channel:



8-channel:



16-channel:



Item	Name	Description
1.	12 VDC	Connect a 12 V power supply via a PSU.
2.	RS-485	Connect a PTZ camera or dome camera to the RS-485 serial port.
3.	Alarm Out	Connect up to one alarm relay outputs.
4.	Alarm In	Connect up to four alarm relay inputs.

Item	Name	Description
5.	LAN	Connect the 10M/100Mbps self-adaptive UTP Ethernet port to a network.
6.	Video In	Connect up to 16 analog cameras (depending on model) to the BNC connectors.
7.	Audio In	Connect an audio input to the RCA connector.
8.	Audio Out	Connect an audio output the RCA connector.
9.	GND	Connect to ground.

Connections

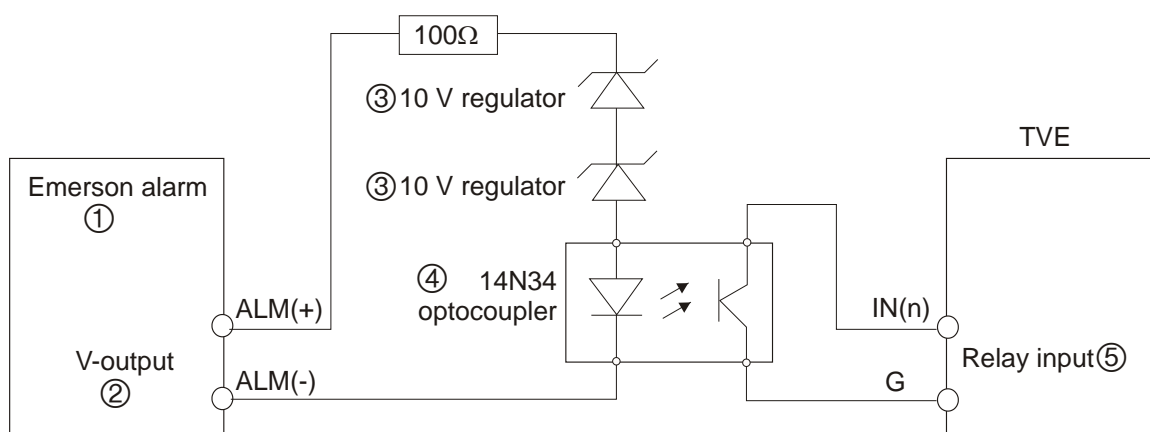
See Figure 2 on page 2 for information on connecting the power, camera, audio and network cables.

Alarm connections

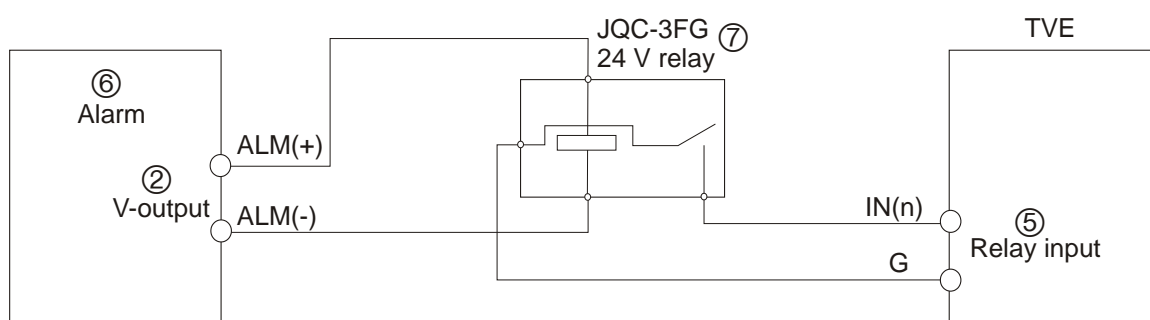
The TVE encoder supports the open/close relay input as the alarm input mode. When the alarm input signal not in open/close relay signal mode, please follow the connections shown below:

Figure 3: Alarm input connections

Alarm input connections for Emerson alarm:



Alarm input connections for normal alarm:



1. Emerson alarm
2. V output
3. 10 V regulator
4. 4N35 optocoupler
5. Relay output
6. Normal alarm
7. JQC-3FG 24 V relay

The TVE encoder supports the open/close relay input as the alarm output mode. The alarm input can be selected to NO or NC. Different alarm output connection methods are applied to the AC or DC load. See Figure 3.

Network Settings

This chapter explains how to use TruVision Device Finder to find and configure the IP address and other parameters of the device.

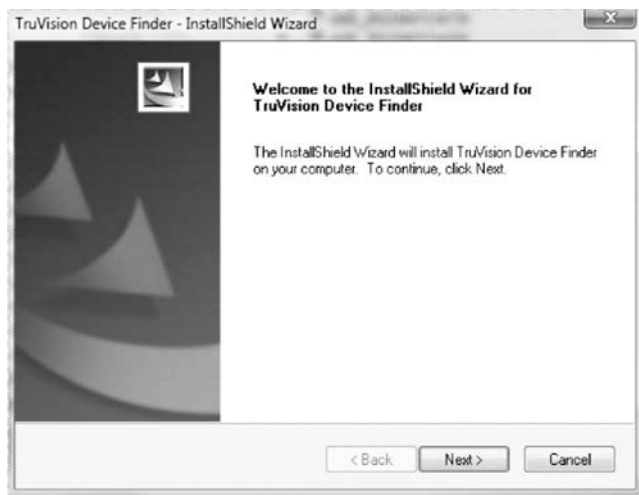
Note: The default user name of TVE is admin, and password is 1234. The default IP address is 192.168.1.70

TruVision Device Finder

The TruVision Device Finder tool can be found on the CD shipped with that product. This tool automatically identifies TruVision devices that support “auto-discovery” anywhere on the network, even in different subnets. You can view and modify the IP address of any discovered device.

To install the TruVision Device Finder:

1. Insert the CD in the computer’s CD/DVD drive.
2. Browse to the folder IP Discovery Tool and double-click the Setup file located in the folder.



3. Click **Next**.
4. Select the folder where the setup will install the files then click **Next**.
5. The program requires a utility called WinPcap to be installed on the computer. If it is already installed, go to step 6.

If the program is not installed, the WinPcap window appears. Follow the on-screen instructions.



6. The TruVision Device Finder Wizard appears. Click **Finish** to complete its installation. **Using the TruVision Device Finder**

The setup will install the necessary files and place the following shortcut on your desktop.

Figure 4: TruVision Device Finder shortcut icon



To use the TruVision Device Finder:

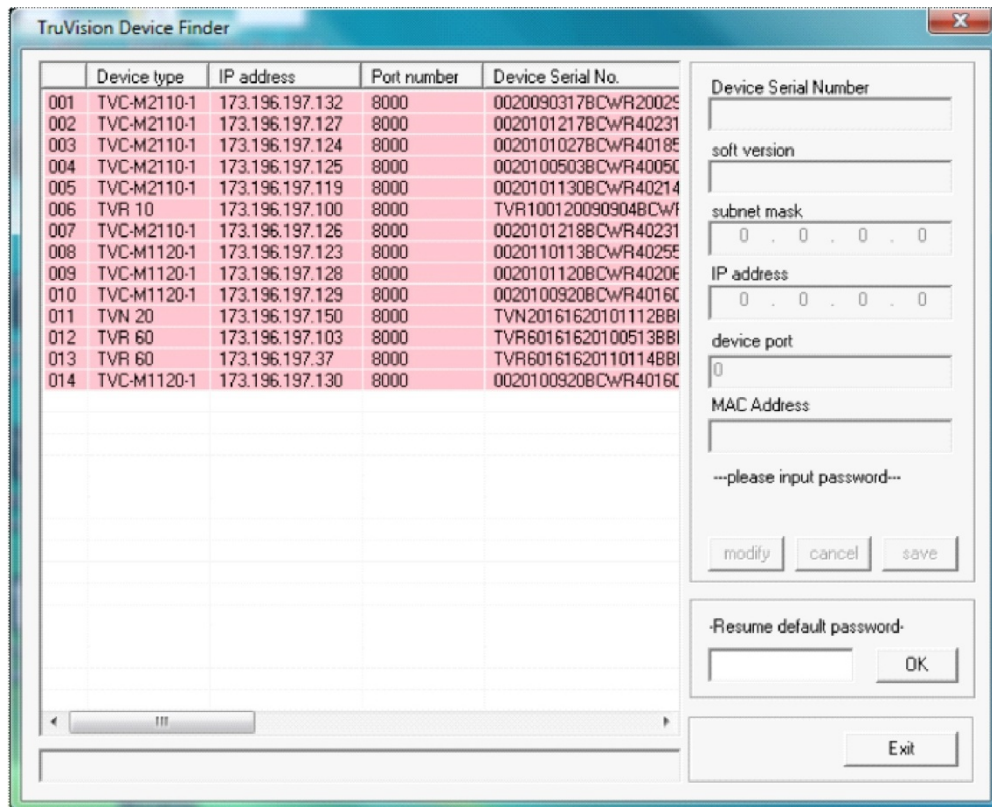
1. Double-click the shortcut icon to open the tool.

The Start window appears.

2. Click **Start** to begin the discovery process.

The list of TruVision devices located on your network appears.

Note: The TruVision Device Finder can only detect devices that are on the same LAN. The tool cannot detect devices placed on a VLAN.



The tool identifies:

- Device type
 - Device MAC address
 - IP address
 - Number of video channels supported by the device
 - Connection port
 - Software version
 - Device serial number
 - DSP/firmware version
 - Device subnet mask
3. To change the IP address and/or the subnet mask of the device, click the line of the device address to be changed. The key device characteristics for that device are listed in the right pane.
 4. Click **Modify** to change the IP address. The IP address and device port address fields will be available to change.
 5. Change/modify the IP address and or subnet mask as required. Under *Please Input Password*, input the device's logon password and press **Save**.
 6. Repeat this process for each device that needs to be modified. When all changes to all discovered devices is complete, press **Exit** to close the tool.

Note: You must reboot to activate the new IP address or subnet mask.

Using a web browser

You can configure the encoder over the network with a web browser.

The supported web browsers include:

- Internet Explorer 6/7/8/9
- Firefox 3.5 and above
- Chrome 8 and above
- Safari 5.0.2 and above

Before you start

- Before accessing the browser, you need to configure the network settings of encoder.
- Connect the encoder to the LAN, and connect a computer to the same LAN as the encoder.
- The encoder's factory default user name is admin and the password is 1234.
- The encoder's factory default IP address is 192.168.1.70.

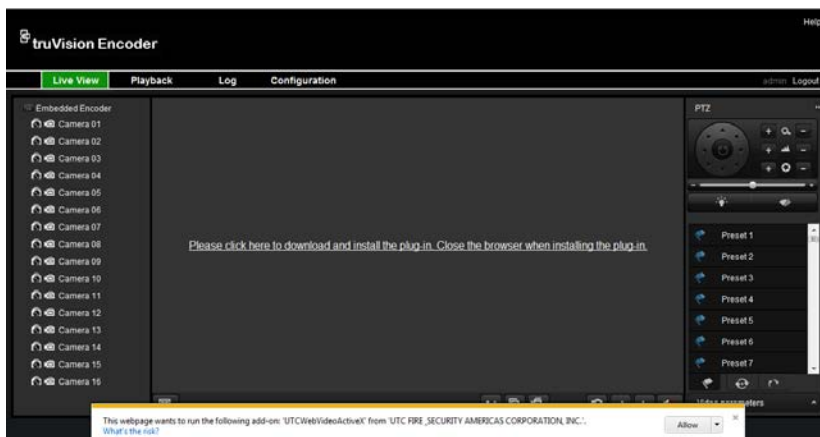
Accessing the web browser

To access the web browser:

1. Open the web browser and enter the IP address of the encoder (for example, <http://192.168.1.70>). Press the **Enter** key on the computer.

The system displays the login window.

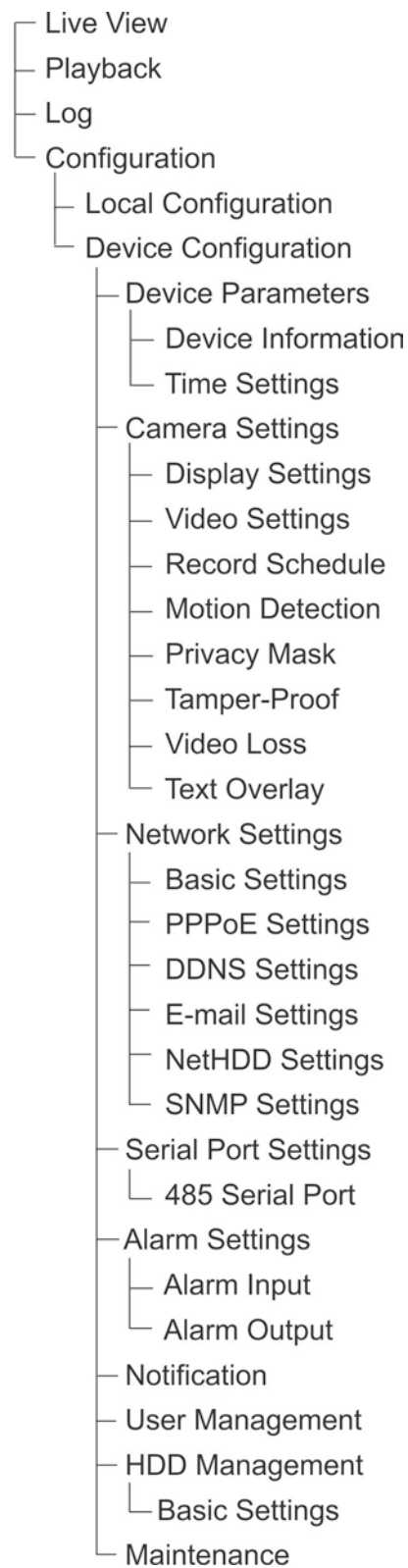
2. Enter the user name (default: admin) and password (default: 1234) to log into the system. The main page of the encoder appears.



3. If you need to install the TruVision Device Finder, click the center of the screen to start downloading it. The tool can be found on the CD shipped with the product.

Menu tree

Figure 5: Encoder menu tree




Live view







Live view mode is the normal operating mode of the device where you watch live images from the cameras. The encoder automatically enters into live mode once powered up. On the viewer, you can see the current date and time, camera name, and whether a recording is in progress.

Description of live view

Figure 6: Live view



Item	Name	Description
1.	Menu toolbar	Lets you do the following: <ul style="list-style-type: none"> • View live video • Play back video • Search for event logs • Configure settings • Exit the interface
2.	Viewer	View live video.
3.	Device list	Display the encoder and its channels.
4.	Display format	<div>  <p>Define how you want video to be displayed in the viewer; single screen, 2X2, 3X3 or 4X4 (2X2 shown above).</p> <p>When in multiview mode, double-click on a video tile to get full-screen mode. Double-click again to return to multiview mode.</p> </div>

Item	Name	Description
5.	Video function toolbar	<div>  Click to start/stop live view. </div> <div>  Click to capture a snapshot of a video image. The image is saved on the computer. </div> <div>  Click to manually start/stop recording video. </div> <div>  Click to display the previous camera view. </div> <div>  Click to display the next camera view. </div> <div>  Click to turn audio on/off. </div>
6.	Video image	Adjust the brightness, hue, saturation and contrast of live video.
7.	Preset setup/selection	Set up and select presets.
8.	PTZ control panel	Control PTZ of the currently selected camera, adjust the speed of PTZ movement and turn on/off the camera light and wiper.

To see live view:

1. Open the encoder's web browser screen. See Figure 6.
2. Double-click a camera from the device list to select a camera to view.
3. Click the **Display Format** button to view multiple video tiles.

Capturing a snapshot

In live view mode, click the snapshot button on the toolbar to capture the live pictures. A pop-up message will appear on screen to confirm that the capture was successful. The image is saved as a JPEG file on the computer.

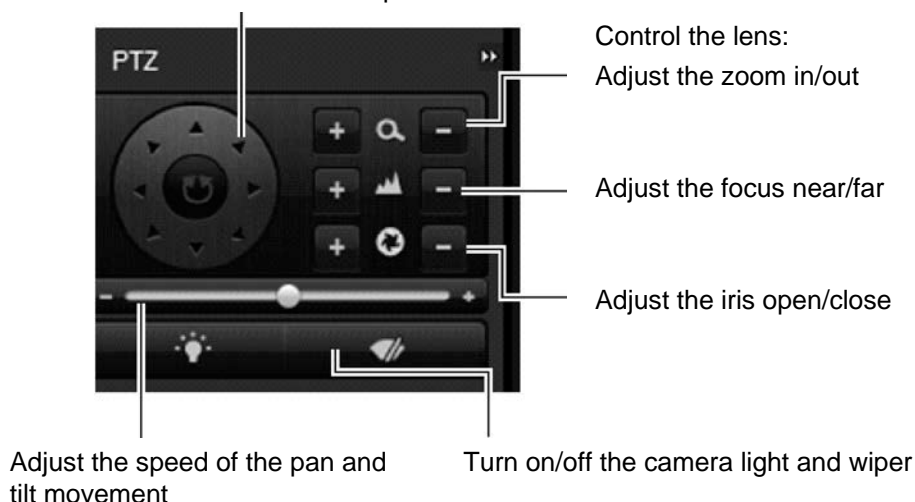
Note: Configure where the snapshots are saved on your computer in the Configuration > Local Configuration page.

PTZ control

You can control PTZ cameras from the encoder in live view mode.

Figure 7: PTZ control

Directional buttons: Control the pan and tilt movement



Connecting the PTZ camera to the encoder

Ensure that the PTZ dome cameras are correctly connected to the RS-485 port on the encoder back panel. Connect the R- and R+ terminals of the PTZ camera or speed dome to the RS-485 T- and RS-485 T+ terminals respectively.

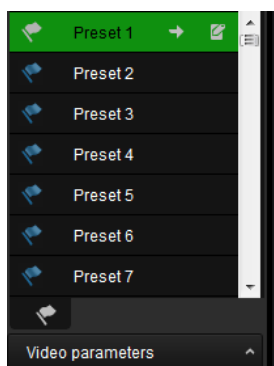
Configure the RS-485 parameters under the **Configuration > Serial port settings > 485 serial port** menu. See page 32.


Presets

Presets are previously defined locations of a PTZ dome camera. It allows you to quickly move the PTZ dome camera to a desired position. Up to 256 preset can be configured.


To set up a preset:

1. In live view mode, select a preset from the preset list.



2. Use the directional, zoom, focus and iris buttons to position the camera in the desired preset location.
3. Click  to save the position.

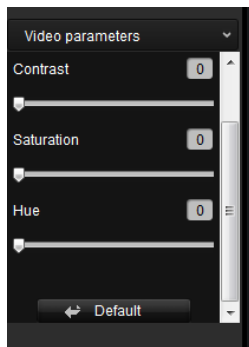
To call up a preset:

1. In live view mode, select a camera.
2. Select a preset from the preset list.
3. Click . The camera immediately moves to that preset position.

Video image settings

You can manually adjust the brightness, saturation, contrast, and hue values of the camera image in order to get the best image quality.

1. In the live view window, click the **Video Parameters** button on the bottom right corner to display the Video Parameters Setting window:



2. Move the slider to adjust the brightness, contrast, saturation and hue.

Note: The range of adjustment is 0 to 100. The default setting is 60. Click **Default** to restore the default settings.

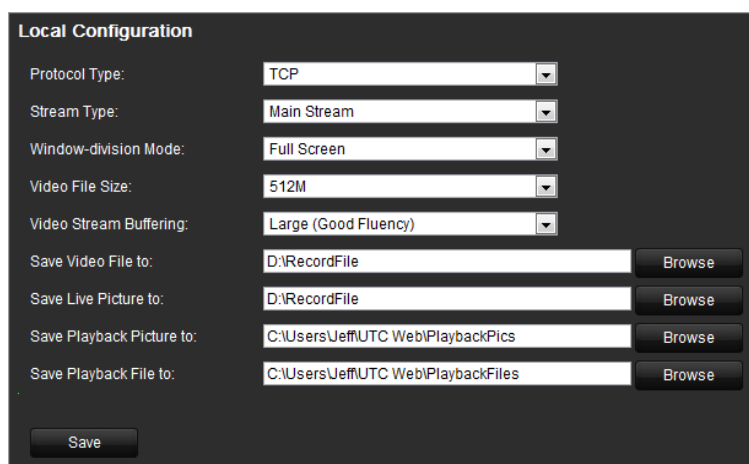
Configuration

Local configuration

Local configuration lets you define communication and network parameters such as protocol type, maximum file size, stream type and network transmission settings. You can also specify the directory locations for saving recorded and playback video, captured images, and downloaded files.

To configure video loss detection:

1. Click **Configuration > Local Configuration**. The Local Configuration window appears.



The screenshot shows the 'Local Configuration' window with the following settings:

Parameter	Value	Action
Protocol Type:	TCP	
Stream Type:	Main Stream	
Window-division Mode:	Full Screen	
Video File Size:	512M	
Video Stream Buffering:	Large (Good Fluency)	
Save Video File to:	D:\RecordFile	Browse
Save Live Picture to:	D:\RecordFile	Browse
Save Playback Picture to:	C:\Users\Jeff\UTC Web\PlaybackPics	Browse
Save Playback File to:	C:\Users\Jeff\UTC Web\PlaybackFiles	Browse

A 'Save' button is located at the bottom left of the window.

2. Enter the required values.

Protocol type: Set the protocol type of stream transmission to TCP or UDP. UDP provides more real-time audio and video streams. TCP ensures the complete deliver of streaming data and better video quality but it may not always be reliable for real-time delivery.

Stream type: Select the stream type (main stream or sub stream) to be used for live view by the web browser.

Window-division mode: Select the window-division view mode to 4:3, 16:9 or full-screen.

Video file size: Select the size of packed video files during manual recording to 256M, 512M or 1G.

Video stream buffering: Set the video buffering size to small (least latency), medium (balanced latency & fluency) or large (good fluency) to decrease latency or increase fluency for live view display performance.

Save video file to: Set the saving path for the manually recorded video files.

Save live pictures to: Set the saving path for the manually captured pictures in live view mode.

Save playback picture to: Set the saving path for the captured pictures in playback mode.

Save playback file to: Set the saving path for the clipped video files in playback mode.

3. Click **Save** to save the settings.

Time settings

You can set up the date and time that will appear on-screen and time stamped recordings. The start and end time of daylight savings time (DST) in the year can also be set.

A Network Time Protocol (NTP) server can also be set up on your encoder to keep the date and time current and accurate. If the encoder is connected to a Dynamic Host Configuration Protocol (DHCP) network that has time server properties configured, the cameras will synchronize automatically with the time server.

To configure time settings:

1. Click **Device Configuration > Device Parameters > Time Settings**. The Time Settings window appears.

2. Select the time zone.

Select the time zone that is closest to the device's location from the drop-down list.

3. Configure the time synchronization method: NTP server or manually.

Configuring time sync by NTP server: Check the **NTP** box. Enter the IP address and port of the NTP server.

Note: If the encoder is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44) or europe.ntp.pool.org. If the encoder is set up in a more customized network, NTP software can be used to establish a NTP server used for time synchronization.

Configuring time synchronization manually: Check the **Manual Time Sync** box. Click the **Select time** icon to set the system time from the pop-up calendar. You can check the checkbox of Sync with local time to synchronize the time with the local PC.

4. Configure the DST settings, if required.

Check the **Enable DST** box. Set the start time and end time of DST period. The end time must be later than the start time. When the DST period ends, the system reverts to the standard local time. Set the DST bias to 30 min, 60 min, 90 min or 120 min.

5. Click **Save** to save the settings.

Network set up

You must configure your encoder's network settings before using it over the network.

Table 1: Encoder network functions

Function	Description
Basic settings	Configure general network settings such as NIC type, IPv4 address, IPv4 subnet mask, IPv4 default gateway, MAC address and MTU. You can also configure the DNS server.
PPPoE	If the encoder is directly connected to ADSL modem, configure the PPPoE settings. Contact your ISP to get the user name and password.
DDNS	If the encoder is set up to use PPPoE as its default network connection, configure the Dynamic DNS (DDNS) to be used in conjunction. You need to register with your ISP before configuring your system for use with DDNS.
E-mail	Configure the encoder to send e-mail notifications of alarms or notifications through the network. Note: Ensure that the DNS address has been set up correctly beforehand.
NetHDD	Configure the network disk before operating the recording, playback or log searching.
SNMP	This is an internet-standard protocol for managing devices on IP networks. Configure this protocol to allow information on the encoder status as well as event and alarm notifications to be sent to a surveillance center. Before configuring this function, you must first install the SNMP software.

To configure basic settings:

1. Click the **Device Configuration > Network Settings > Basic Settings**. The Basic Settings window appears.

2. Click **General** and enter the required settings:

Option	Description
NIC type	Network interface card (NIC) is a device used to connect the DVR to a network. Select the NIC type used from the drop-down list. Default value is 10/100/1000M self-adaptive.
Enable DHCP	Check this box if you have a DHCP server running and want your encoder to automatically obtain an IP address and other network settings from that server. Default value is Disable.
IPv4 address	Enter the IP address for the encoder. Default value is 192.168.1.70.
IPv4 subnet mask	Enter the subnet mask for your network so the encoder will be recognized within the network. Default value is 255.255.255.0.
IPv4 default gateway	Enter the IP address of your network gateway so the encoder will be recognized within the network. This is typically the IP address of your router. Default value is 0.0.0.0.
MAC address	Enter the MC address.
MTU (bytes)	Enter a value between 500 and 9676. Default is 1500.
Preferred DNS server	Enter the preferred domain name server to use with the encoder.
Alternate DNS server	Enter the alternate domain name server to use with the encoder.

3. Click **Save** to save the settings.

To configure PPPoE settings:

1. Click the **Device Configuration > Network Settings > PPPoE Settings**. The PPPoE Settings window appears.
2. Check **Enable PPPoE**.

3. Enter your user name and password and confirm the password.
Note: The user name and password should be assigned by your ISP.
4. Click **Save** to save the settings.

To set up DDNS:

1. Click the **Device Configuration > Network Settings > DDNS Settings**. The DDNS Settings window appears.
2. Check **Enable DDNS**.
3. Select one of the three DDNS types listed:
 - **DynDNS:** Enter the server address for DynDNS (i.e. members.dyndns.org). In the DVR Domain Name field, enter the domain obtained from the DynDNS web site. Then enter the user name and password registered in the DynDNS network.
 - **IP server:** Enter the server address for IP Server.
 - **NO-IP:** Enter the server address for NO-IP. In the domain name text field, enter the domain obtained from the NO-IP website (www.no-ip.com). Enter the user name and password registered on the NO-IP website.
4. Click **Save** to save the settings.

To configure e-mail settings:

1. Click the **Device Configuration > Network Settings > Basic Settings** to set the IPv4 Address, IPv4 Subnet Mask, IPv4 Default Gateway and the Preferred DNS Server.
2. Click the **Device Configuration > Network Settings > Email Settings**. The Email Settings window appears.
3. Check **Authentication** if your mail server requires authentication. Enter the login user name and password.
4. Enter the required settings.

Option	Description
SMTP server	Enter the SMTP server's IP address.
SMTP port	Enter the SMTP port. The default TCP/IP port for SMTP is 25.
Enable SSL	Check the box to enable SSL if it is required by the SMTP server. This feature is optional.
Interval	The interval represents the time range in between the alarm images being sent. For example, if you set the interval at two seconds, the second alarm image will be sent two seconds after the first alarm image.
Attached image	Check the box if you want to send email with attached alarm JPEG images.
Sender name	Enter the name of the sender of the e-mail.
Sender's address	Enter the sender's e-mail address.

Option	Description
Choose receiver	Select an e-mail recipient. Up to three receivers can be selected.
Receiver	Enter the name of the receiver of the e-mail.
Receiver's address	Enter the e-mail address of the receiver.

- Click **Test** to test the e-mail settings.

Note: We recommend that you test the e-mail settings after entering values in the e-mail window.

- Click **Save** to save the settings.

To configure NetHDD settings:

Note: Ensure that the network storage device is available within the network and is properly connected. Also the network storage device must be configured with NAS or IP SAN mode.

- Click the **Device Configuration > Network Settings > NetHDD Settings**. The NetHDD Settings window appears.
- Enter the IP address of the network storage system and file path in the text field.
- Select the type of network storage system: IP SAN or NAS.

NAS mode: Enter the IP address of the storage device.

IP SAN mode: Enter the IP address of the storage device.

- Click **Save** to add the configured network disk.
- Initialize the added network disk.

Click **Device Configuration > HDD Management** to enter the HDD settings menu. The capacity, free space, status, type and property of the added network disk are displayed.

The screenshot shows the 'HDD Management' window. It contains a table with the following data:

HDD No.	Capacity (GB)	Free Space (GB)	Status	Type	Property
<input checked="" type="checkbox"/> HDD17	0	0	Offline	NAS	R/W

Below the table, there are two dropdown menus: 'HDD No.: HDD17' and 'Property: R/W', followed by a 'Set' button. Under the 'HDD Initialization' section, there is a 'Select All' checkbox and an 'Init' button. At the bottom, there is an 'Init Status:' label.

If the status of the network disk is Uninitialized, select the disk and click **Init** to start initializing it. When the initialization is complete, the disk status becomes Normal.

Note: Up to 8 NAS or IP SAN disk can be connected to the encoder.

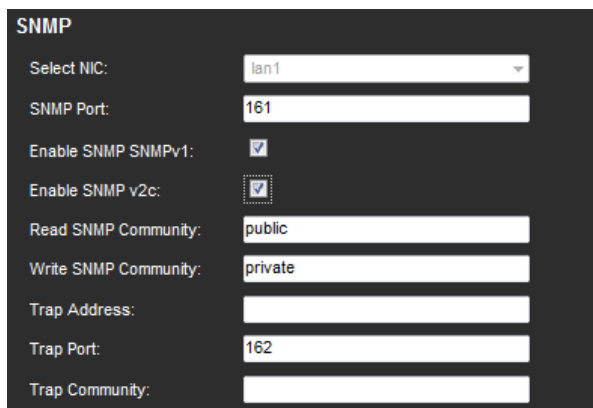
6. Set the property of the added network disk.

Select the HDD number. Select its property from the drop-down menu: R/W, Read-only or Redundancy.

Note: Please refer to the IP SAN/NAS user manual on how to create a file path in network management.

To configure SNMP protocol settings:

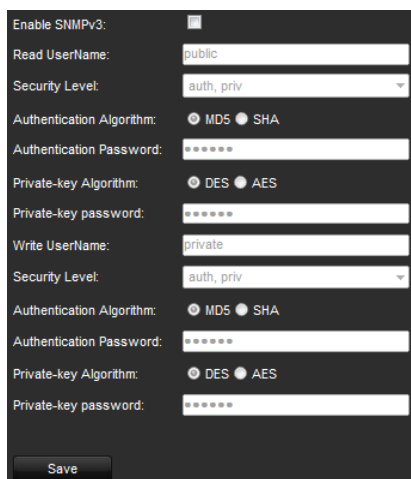
1. Click the **Device Configuration > Network Settings > SNMP Settings**. The SNMP Settings window appears.

The image shows the 'SNMP' configuration window. It contains the following fields: 'Select NIC:' with a dropdown menu showing 'lan1'; 'SNMP Port:' with a text box containing '161'; 'Enable SNMP SNMPv1:' with a checked checkbox; 'Enable SNMP v2c:' with a checked checkbox; 'Read SNMP Community:' with a text box containing 'public'; 'Write SNMP Community:' with a text box containing 'private'; 'Trap Address:' with an empty text box; 'Trap Port:' with a text box containing '162'; and 'Trap Community:' with an empty text box.

2. Enter the NIC port value. The default value is 161.
3. When SNMPv1 and/or SNMP v2c are enabled, you can configure the read SNMP community (default: public), write SNMP community (default: private), trap address (default: empty) and trap port (default: 162).
4. When SNMPv3 is enabled, you can configure the read user name (default: public).

Note: SNMPv1, SNMP v2c and SNMPv3 are disabled by default.

5. Select the security level: “no auth, no priv”, “auth, no priv” or “auth, priv”.

The image shows the 'Enable SNMPv3:' configuration window. It contains the following fields: 'Enable SNMPv3:' with a checked checkbox; 'Read UserName:' with a text box containing 'public'; 'Security Level:' with a dropdown menu showing 'auth, priv'; 'Authentication Algorithm:' with radio buttons for 'MD5' (selected) and 'SHA'; 'Authentication Password:' with a masked text box; 'Private-key Algorithm:' with radio buttons for 'DES' (selected) and 'AES'; 'Private-key password:' with a masked text box; 'Write UserName:' with a text box containing 'private'; 'Security Level:' with a dropdown menu showing 'auth, priv'; 'Authentication Algorithm:' with radio buttons for 'MD5' (selected) and 'SHA'; 'Authentication Password:' with a masked text box; 'Private-key Algorithm:' with radio buttons for 'DES' (selected) and 'AES'; 'Private-key password:' with a masked text box; and a 'Save' button at the bottom.

6. When the security level is set to “auth, priv”, configure the Authentication Algorithm and Privacy Algorithm parameters.

When the security level is set to “no auth, no priv”, the Authentication Algorithm and Privacy Algorithm parameters cannot be configured.

6. Click **Save** to save the settings.

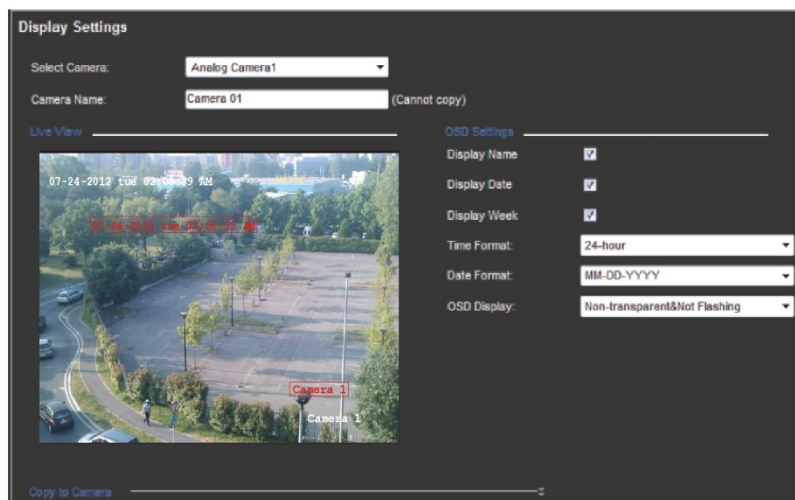
Camera set up

You can configure which information is displayed on-screen. The on-screen display (OSD) settings appear in live view and recording modes and include the camera name, time and date. You can also adjust the transparency of the OSD relative to the background so that it is easier to read or is less prominent on screen.

You can add up to eight lines of text on screen. This option can be used, for example, to display emergency contact details.

To configure the OSD settings:

1. Click the **Device Configuration > Camera Settings > Display Settings**. The Display Setting window appears.



2. Select a camera from the drop-down list.
3. Enter a camera name in the text field.
4. Check the Display Name, Display Date, and Display Week boxes to display the camera name, date, and week.
5. Select a date format and a time format.
6. Select how you want the camera information displayed.

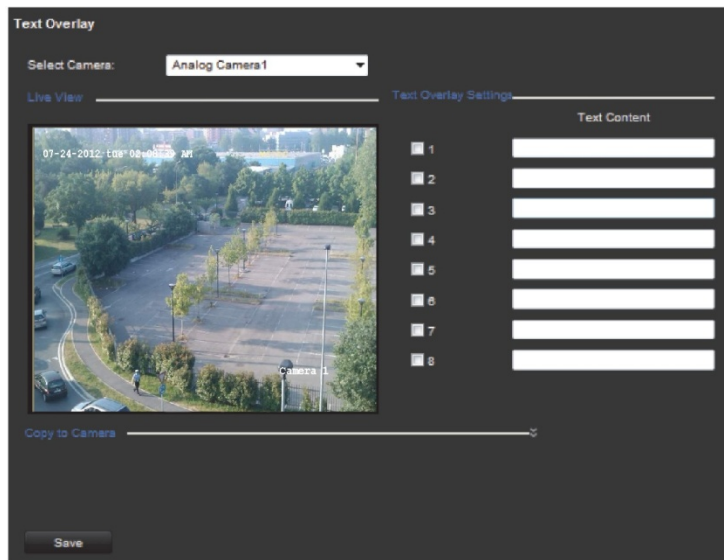
Select one of the options from the drop-down list. Default is non-transparent/non-flashing.

- Transparent & flashing
- Transparent & not flashing
- Non-transparent & flashing
- Non-transparent & non-flashing

7. There are two red text boxes in the camera view screen; one for the camera name and the other for the date/time. Using the mouse, click and drag a text box to the desired position.
8. To copy the settings to other cameras, click **Copy to Camera** and select the desired cameras. Click **OK**.
9. Click **Save** to save the settings.

To add a text overlay:

1. Click the **Device Configuration > Camera Settings > Text Overlay Settings**. The Text Overlay Setting window appears.
2. Select a camera from the drop-down list.
3. Click the checkbox for a line of text and enter the characters. The text box appears on the camera view screen. Using the mouse, click and drag the text box to the desired position.



4. Click **Save** to save the settings.

Video streaming set up

You can adjust the video recording parameters to obtain the image quality and file size best suited to your needs.

To configure video settings:

1. Click **Device Configuration > Camera Settings > Video Settings**. The Video Setting window appears.

2. Select a camera from the drop-down list.
3. Select the dual streaming method to be used: Main stream (Normal), Substream, and Main stream (Event). Default is Main stream (Normal).

Note: Main stream is usually used for recording and live viewing with good bandwidth. Substream is used for live viewing when the bandwidth is low.

4. Specify the parameters of the main stream or substream:

Stream type: Select Video to record video stream only or Video&Audio to record both video and audio streams. Default is Video&Audio.

Resolution: Select the recording resolution: NTSC values are 704x480, 704x240, 352x240, or 176 x120 for NTSC. PAL values are 704x576, 704x288, 352x288, or 176 x 144.

Bit rate type: Select variable or fixed bit rate. Variable produces higher quality results suitable for video downloads and streaming. Default is Variable.

Image quality: This option is available when the bit rate type is variable. Select one of the options: Highest, Higher, Medium, Low, Lower, or Lowest. Default is Highest.

Frame rate: Select one of the options: 1, 2, 4, 6, 8, 10, 12, 15, 16, 18, 20, 22 or full frame 25/30 (PAL/NTSC). Default is full frame (25/30 (PAL/NTSC)).

Max bit rate: Enter the maximum allowed bit rate. Value must be between 32 and 3072 Kbps.

Video encoding: Select the video encoding standard H.264.

5. Click **Save** to save the settings.

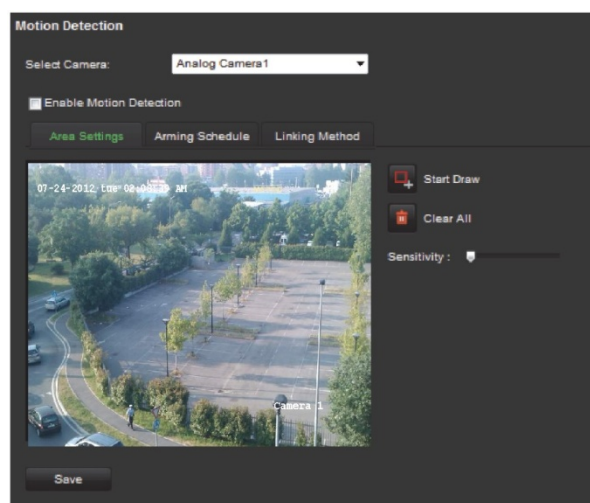
Motion detection

The encoder can be set up to trigger an alarm if it detects motion and to record it. You can then search these recorded motion activities for specific incidents.

Select the level of sensitivity to motion so that only objects that could be of interest can trigger a motion recording. For example, recording is triggered by the movement of a person but not that of a cat.

To configure motion detection:

1. Click **Configuration > Camera Settings > Motion detection**. The Motion Detection window appears.



2. Select a camera from the drop-down list. Each camera must be set up individually.
3. Check **Enable Motion Detection**.
4. **Select the area sensitive to motion and the sensitivity level.**

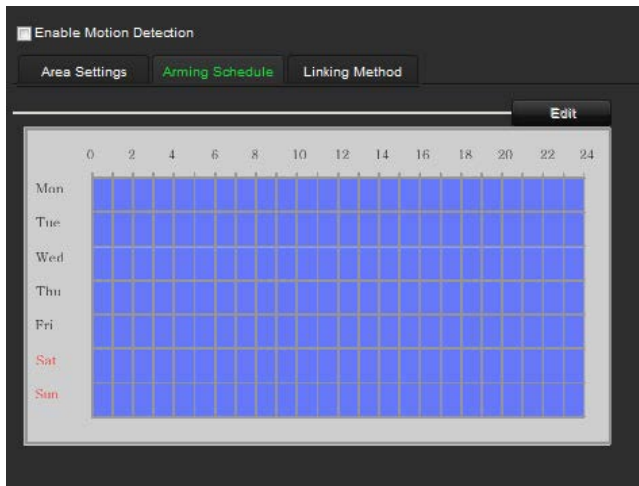
Click **Start Draw**. Click and drag the mouse cursor across the screen. The area selected appears as a red grid. Areas covered by the red grid are sensitive to motion detection. Up to eight areas can be drawn. Click **Stop Draw** when completed. Click **Clear All** to clear the screen.


Drag the Sensitivity scroll bar to the desired sensitivity level. The highest value is on the right of the bar.

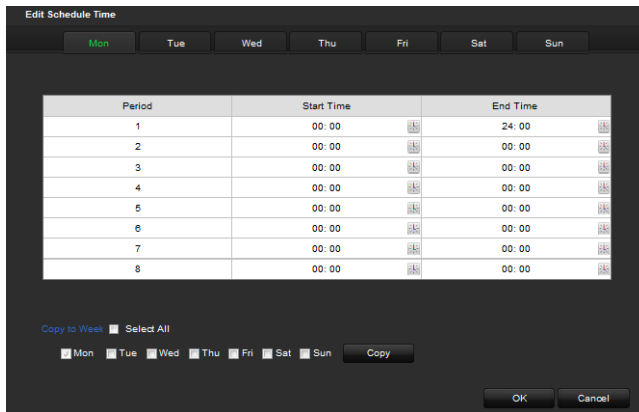
Click **Save** to save the settings.

5. **Select the recording schedules for motion detection.**

Click the **Arming schedule** tab. Click **Edit**.



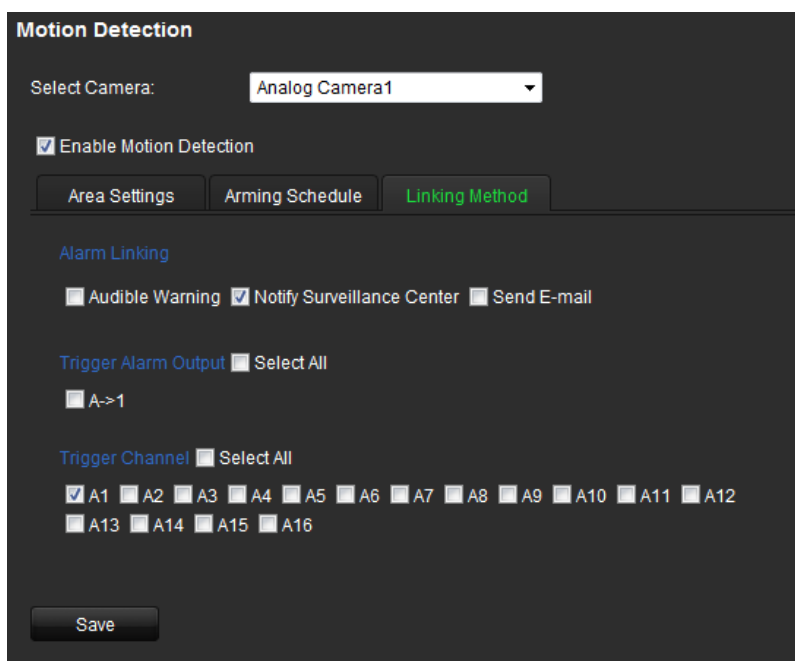
Select the day of the week when motion can be recorded. Click  to set the time periods for the arming schedule during the day. You can schedule up to eight time periods in a day. Default is 24 hours. Click **OK**.



Note: Time periods defined cannot overlap.

6. Select the response method to motion detection.

Click the **Linking Method** tab.

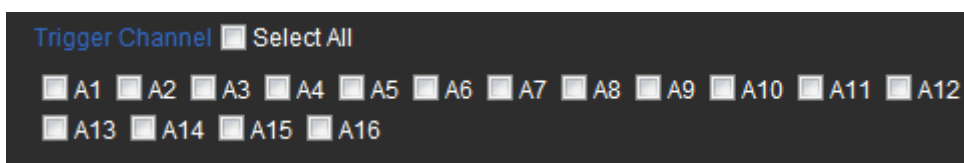


Under **Alarm Linking** check one or more of the desired response methods:

- Audible warning: Trigger an audible beep when an alarm is detected
- Notify surveillance center: Send a notification or alarm signal to remote alarm host when an event occurs. The alarm host refers to the computer installed with remote client software
- Send e-mail: Send an e-mail with alarm information to a user or users when an event occurs.

Under **Trigger Alarm Output** select the channel to trigger an external alarm output when a motion detection event occurs. See “To set up an alarm output” below on how to set up an external alarm output.

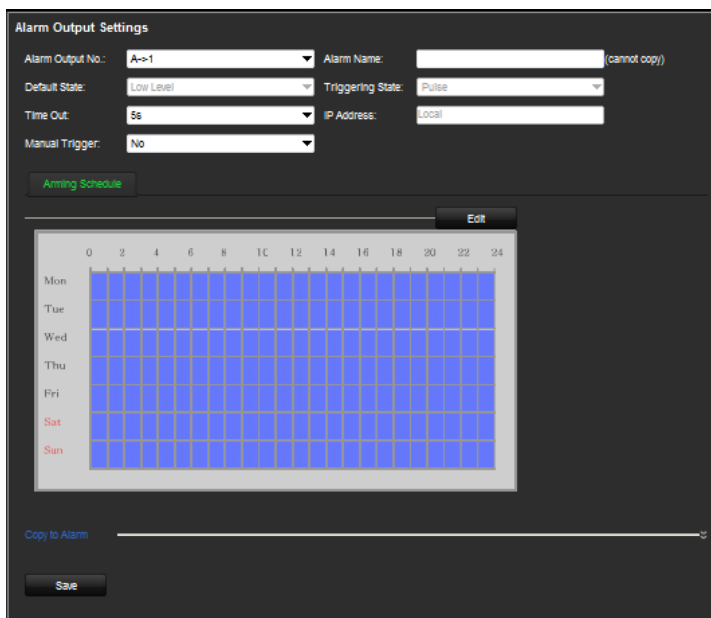
Select the channel to trigger recording when a motion detection event occurs.



7. Click **Save** to save settings.

To configure an alarm output:

1. Click **Device Configuration > Alarm Settings > Alarm Output**. The Alarm Output window appears.



2. Select an alarm output.
3. Select a time out option.

The time out setting lets you define how long a signal remains active after the alarm has ended. Select a time out option: 5, 10, and 30 seconds, 1, 2, 5, and 10 minutes, and Manual clear. If “Manual clear” is selected, the alarm output will stop only when the alarm input stops.

If you select **Manual Trigger**, the signal remains active until it is manually acknowledged by selecting “No”.

4. Select the recording schedules for the alarm output.

Click **Edit**. In the **Edit Schedule Time** window select the day of the week and the time periods during the day when motion can be recorded. You can schedule up to eight time periods in a day. Default is 24 hours.

Click **Save** to save the settings.

Note: The time periods defined cannot overlap.

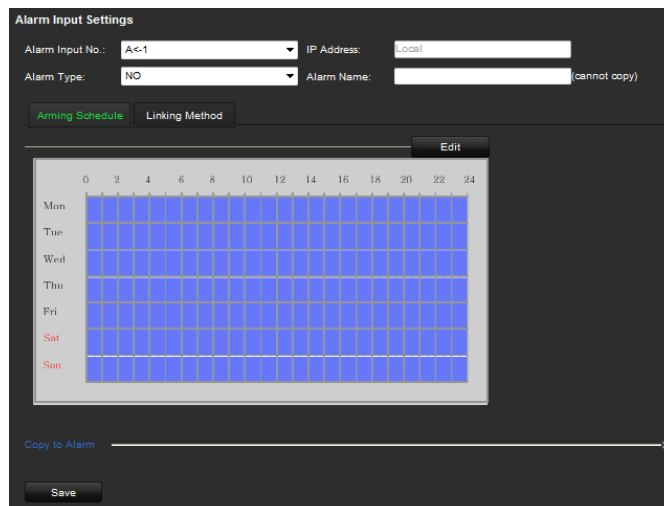
5. Click **Save** to save settings.

Alarm input settings

The encoder can be configured to record when an alarm is triggered by an external alarm device (for example, PIR detector, dry contacts...).

To configure alarm inputs:

1. Click **Device Configuration > Alarm Settings > Alarm Input**. The Alarm Input window appears.



2. Select the alarm input number of a camera.
3. Select the alarm input type, NO or NC.
4. Set the arming schedule for the alarm input.
5. Select the response method to motion detection.

Click the **Linking Method** tab. Under **Alarm Linking** check one or more of the desired the response methods:

- **Audible warning:** Trigger an audible beep when an alarm is detected
- **Notify surveillance center:** Send a notification or alarm signal to remote alarm host when an event occurs. The alarm host refers to the computer installed with remote client software

- **Send e-mail:** Send an e-mail with alarm information to a user or users when an event occurs.

Under **Trigger Alarm Output** select the channel to trigger an external alarm output when a motion detection event occurs. See “To set up an alarm output” on how to set up an external alarm output.

Select the channel to trigger recording when a motion detection event occurs.

If the camera is PTZ, select PTZ linking.

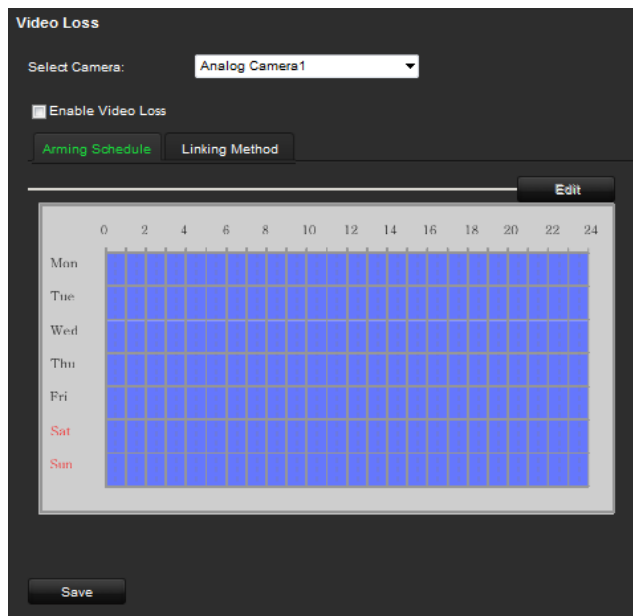
6. Click **Save** to save settings.

Video loss

Video may be lost if the video cable or camera develop a fault or are damaged. You can set up your encoder to detect video loss and trigger a system notification.

To configure video loss detection:

1. Click **Device Configuration > Camera Settings > Video Loss**. The Video Loss window appears.



2. Select a camera to configure for video loss detection.
3. Check the **Enable Video Loss** box.
4. Under the **Arming Schedule** tab, click **Edit** to modify the arming schedule for video loss detection. The configuration is the same as that for the arming schedule for motion detection. See page 23 for further information.
5. Select the **Linking Method** tab. Then select the response method to notify you of the alarm.
6. Click **Save** to save the settings.

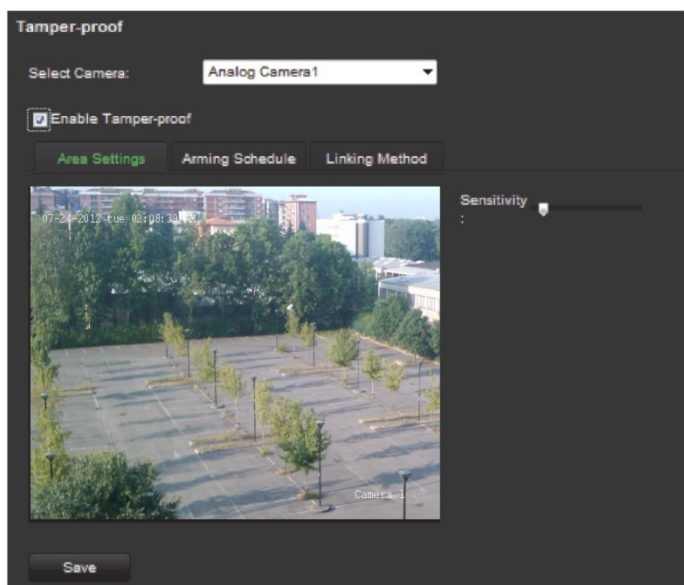
Tamper-proof alarm

Video tampering, such as moving a camera to a different position, can also be detected and set to trigger an action on the encoder.

Note: It is strongly recommended not to configure for video tampering when using PTZ dome cameras.

To configure tamper-proof detection:

1. Click **Device Configuration > Camera Settings > Tamper-Proof**. The Tamper-Proof Settings window appears.



2. Select camera for which to set up tamper-proof detection.
3. Check the **Tamper-Proof** box.
Note: Under **Area Settings**, the full screen is set for tamper-proof detection. This cannot be changed.
4. Select the **Arming Schedule** tab and click **Edit** to modify the arming schedule for video loss detection. The configuration is the same as that for the arming schedule for motion detection. See page 23 for further information.
5. Select the **Linking Method** tab. Then select the response method to notify you of the alarm.
6. Click **Save** to save the settings.

System notification

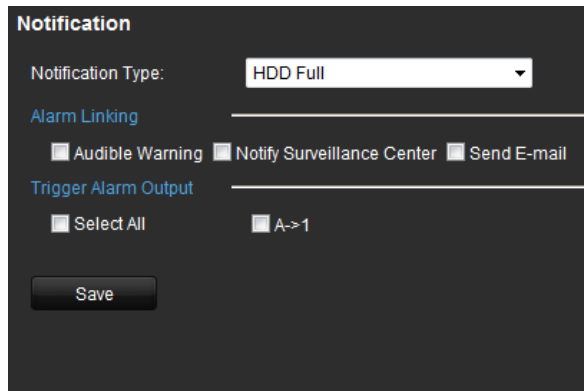
Setting up system notifications instructs the encoder to alert you when irregular events occur and how to alert you to the event.

The system notifications include:

- **HDD full:** All installed HDDs are full.
- **HDD error:** Errors occurred while files were being written to the HDD, no HDD installed or HDD had failed to initialize.
- **Network disconnected:** Disconnected network cable.
- **IP conflicted:** Conflict with IP address setting.
- **Illegal login:** Wrong user ID or password used.
- **Abnormal record:** No space on the HDD to save recorded files.
- **Abnormal video signal:** Poor video quality.

To set up system notifications:

1. Click **Device Configuration > Notification**. The Notification window appears.



Notification

Notification Type: HDD Full

Alarm Linking

☐ Audible Warning ☐ Notify Surveillance Center ☐ Send E-mail

Trigger Alarm Output

☐ Select All ☐ A->1

Save

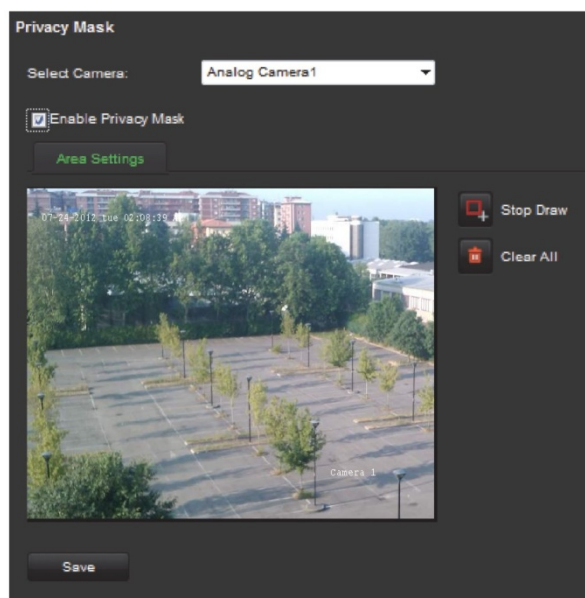
2. Select a notification type.
3. Check one or more response options: Audible warning, notify surveillance center, send e-mail, and trigger alarm output.
4. Click **Save** to save the settings.

Privacy masking

You can define an area on screen to remain hidden from view. For example, you can choose to block the view of a camera when overlooking residential premises. This hidden area is referred to as privacy masking. Privacy masking cannot be viewed in live view or recorded mode, and appears as a blank area on the video image.

To configure a privacy mask:

1. Click **Device Configuration > Camera Settings > Privacy Mask**. The Privacy Mask window appears.
2. Select camera for which to set up privacy masking.
3. Check the **Enable Privacy Mask** box.




Privacy Mask

Select Camera: Analog Camera1

☒ Enable Privacy Mask

Area Settings



07-24-2013 Tue 02:09:13

Camera 1

Stop Draw

Clear All

Save

4. Click the **Start Draw** button to start drawing an area.
5. Using the mouse, click and drag a privacy-mask box in the camera view screen over the desired area. You can set up to four areas for privacy masking.
6. Click the **Stop Draw** button to stop drawing.
Note: Click the **Clear All** button to clear all mask areas.
7. Click **Save** to save the settings.

RS-485 settings

The RS-485 serial port is used to control the PTZ of the camera. The PTZ parameters need to be configured before you control the PTZ unit.

To configure a privacy mask:

1. Click **Device Configuration > Serial Port Settings > RS-485**. The RS-485 window appears.
2. Enter the RS-485 parameters. The default parameters are:

Baud rate: 9600

Data bit: 8

Stop bit: 1

Parity: None

Flow control: None

PTZ protocol: A-01

Address: 0

Note: It is important to ensure that the settings correspond with those used in the PTZ camera.

3. Click **Save** to save the settings.

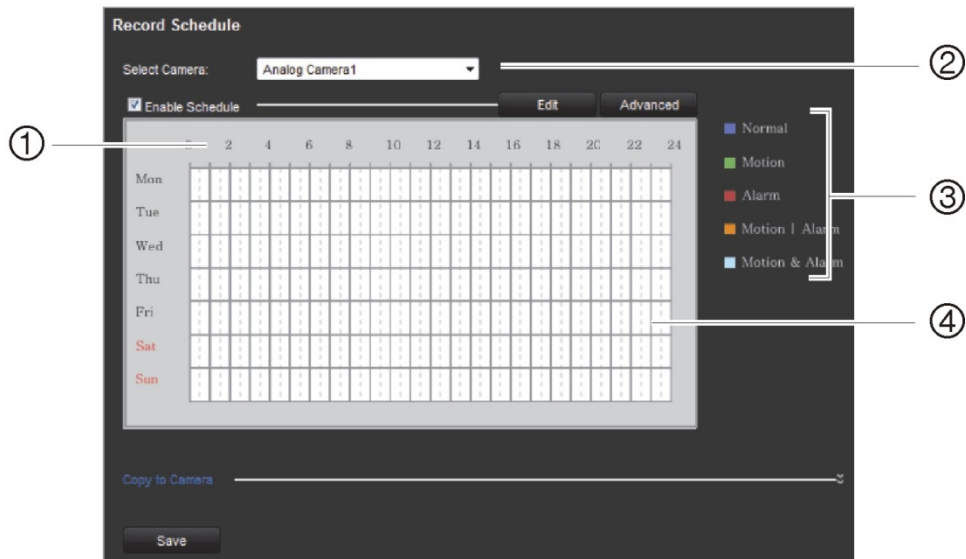
Scheduling record settings

Ensure that the NetHDD has been installed and initialized before configuring the recording settings.

Description of the record schedule window

Defining a recording schedule lets you specify when the encoder records video and under what circumstances. Each camera can be configured to have its own recording schedule.

Figure 8: Description of the Record Schedule window



1. **Schedule time.** Represents the 24-hour cycle during which a schedule is selected.
2. **Camera.** Select a camera for the recording schedule.
3. **Recording type.** There are five recording types to select for the schedule, which are color-coded:
 - Normal (Blue): Records continuously.
 - Motion (Green): Records only motion events.
 - Alarm (Red): Records only alarm events.
 - Motion | Alarm (Orange): Records motion or alarm events.
 - Motion & Alarm (Pale blue): Records motion and alarm events.
4. **Timeline (TL).** There is a 24-hour time line for each day. Each square in the timeline represents an hour in the 24-hour period. Up to eight recording periods can be scheduled during the 24-hour period.

To configure a scheduled recording:

1. Click **Device Configuration > Camera Settings > Record Schedule**. The Record Schedule window appears.
2. Select the camera you want to configure.
3. Check the **Enable Schedule** box. If left unchecked, the encoder will not record.
4. Click **Edit** to configure the recording settings.

TimeSegment	Start Time	End Time	Record Type
1	00:00	00:00	Normal
2	00:00	00:00	Normal
3	00:00	00:00	Normal
4	00:00	00:00	Normal
5	00:00	00:00	Normal
6	00:00	00:00	Normal
7	00:00	00:00	Normal
8	00:00	00:00	Normal

5. Configure the recording schedule:

All day recording: Check **All Day**.

Segment recording: Check **Segment Record**. Check the day of the week required and set the start and end time for recording. You can schedule up to eight time periods in a day. The segments cannot overlap.

6. Select a recording type.

This setting instructs the encoder to begin recording when an alarm is triggered. The recording types available are: Normal, Motion, Alarm, Motion or Alarm, Motion and Alarm.

Note: If Motion, Alarm, Motion or Alarm, Motion and Alarm types are selected, you must also configure the alarm linking method to be used. See “Motion detection on page 23 and “Alarm input settings” on page 27.

7. Copy the schedule to other days of the week.

Check **Select All** to copy the schedule to all days of the week.

To copy these settings to another day, check the days required and click **Copy**.

Note: To configure different schedules for other days, click the tab for the desired day and set the schedule.

8. Click **OK** to save the settings. Return to the Record Schedule window.
9. Schedule pre and post recording times.

Click **Advanced** and select the desired times.

Pre-record: This is the time the camera starts recording before the scheduled time or event. The times available are: No pre-record, 5 s, 10 s, 15 s, 20 s, 25 s, 30 s or Unlimited.

Post-record: This is the time the camera continues to record after the scheduled time or event. The times available are: 5 s, 10 s, 30 s, 1 min, 2 min, 5 min or 10 min.

10. Click **OK**. Return to the Record Schedule window.

11. Click **Save** to save the settings.

To make redundant recordings:

Use this option to make a back-up of recordings as a safeguard against losing all the files in case of disk failure.

Note: You must have one NetHDD property identified as redundant to do redundant recording.

1. Configure the recording schedule of a camera.
2. Click **Advanced** in the Record Schedule window.
3. Under **Redundant Record** select the **Yes**.
4. Click **OK**. Return to the Record Schedule window.
5. Click **Save** to save the settings.

To auto delete recordings:

1. Click **Configuration > Device Configuration > Camera Settings > Record Schedule**. The Record Schedule window appears.
2. Configure the recording schedule of a camera.
3. Click **Advanced** in the Record Schedule window.
Under **Expired Time** select the number of days after which recorded video from the specified camera is permanently deleted from the HDD.
4. Click **OK**. Return to the Record Schedule window.
5. Click **Save** to save the settings.

Managing user accounts

By default the encoder comes with three user accounts: an Administrator account, an Operator account and a Guest account. These accounts provide multiple levels of access and functionality. See Table 2 on page 36 for a description of the different user accounts.

Table 2: User accounts

User	Description
Administrator	<p>The administrator account includes full access to all settings. The Administrator has the authority to add, delete or configure parameters for many of the system functions.</p> <p>There can only be one administrator.</p> <p>The user name is admin. The name cannot be modified.</p> <p>The default password is 1234.</p>
Operator	<p>The default operator account includes access to remote view logs/status, bi-directional audio, live view, PTZ control and playback (inaccessible features are not visible). The administrator can change the access privileges under Basic Permission and Camera Operation.</p> <p>There is no default user name and password. The administrator must create the user name and password.</p>
Guest	<p>The default guest user account includes access to remote view logs/status and playback (inaccessible features are not visible). The administrator can change the access privileges under Basic Permission and Camera Operation.</p> <p>There is no default user name and password. The administrator must create the user name and password.</p>

Note: Default passwords should be changed for security reasons.

To add a new user:

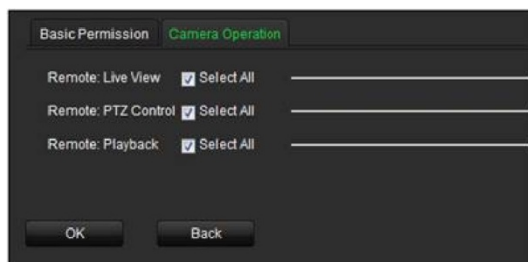
1. Click **Configuration > Device Configuration > User Management**. The User Information window appears.

Note: Only a system administrator can create a user. You can add up to 31 new users.

2. Click **Add**. The Modify User window appears.

3. Enter the user name and password. Both the user name and password can have up to 16 alphanumeric characters.

4. Select the user type: Operator or Guest.
5. Define the user's permissions under **Basic Permission** and **Camera Operation**.



6. Click **OK**.

To modify a user:

1. Click **Configuration > Device Configuration > User Management**. The User Information window appears.
2. Click **Modify**. The Modify User window appears.
3. Modify the user information such as the user name and password, user type, and user's permissions under **Basic Permission** and **Camera Operation**.
4. Click **OK**.

To delete a user:

1. Click **Configuration > Device Configuration > User Management**. The User Information window appears.
2. Click **Delete**.
3. Click OK in the pop-up window to confirm deletion. The user is immediately deleted.
4. Click **OK**.




Playback







You can easily search and play back recorded videos by camera, date and time.

A search will usually produce a list of files, which may extend to several pages. Only one file can be played back at a time.


Figure 9: Playback window



Item	Name	Description
1.	Camera panel	Select the cameras for playback.
2.	Playback viewer	The playback video has a time/date stamp on it for evidentiary purposes.
3.	Calendar panel	Select a date to playback recordings.
4.	Search panel	Results of search displayed here.
5.	Timeline	Allows you to jump forwards or backwards in time. The timeline moves left (oldest video) to right (newest video). Click a location on it for where you want playback to start. It also shows the type of recording by color coding.
6.	Time bar	Time of actual playback. Drag the bar to an exact spot where you want playback to start.
7.	Playback control toolbar	<div>  Play back recording. </div> <div>  Stop playback. </div> <div>  Decrease playback speed: Options available are: single frame, 1/8 speed, 1/4 speed, 1/2 speed, normal, X2 speed, X4 speed, X8 speed, maximum speed. </div>

Item	Name	Description
		 Increase playback speed. Options available are: single frame, 1/8 speed, 1/4 speed, 1/2 speed, normal, X2 speed, X4 speed, X8 speed, maximum speed.
		 Play back frame-by-frame. This allows you to carefully examine an event frame-by-frame as it happens
		 Stop playback for all cameras.
		 Capture a snapshot of a video image. The image is saved on the computer.
		 Start/stop video clip during playback. Sections of a recording can be saved to an external storage device.
		 Audio on/off.
8.	Recording type	<p>Description of the color coding of recording types shown in the timeline.</p> <p>Green indicates continuous recording. Red indicates alarm/event recording. Yellow indicates motion recording.</p>
9.	Time selection box	Enter an exact time to start playback.

To play back a recording:

1. Click the **Playback** button on the menu toolbar. The Playback window appears.
2. Select a camera and date for play back. Click **Search**.
The list of search results appears
3. Select a file and click **Play** to start playback.
4. Use the playback control toolbar to manually control playback.
5. To select an exact time to start playback, drag the time bar to where you want playback to start . You can also enter the exact time into the time selection box and click .

Encoder management

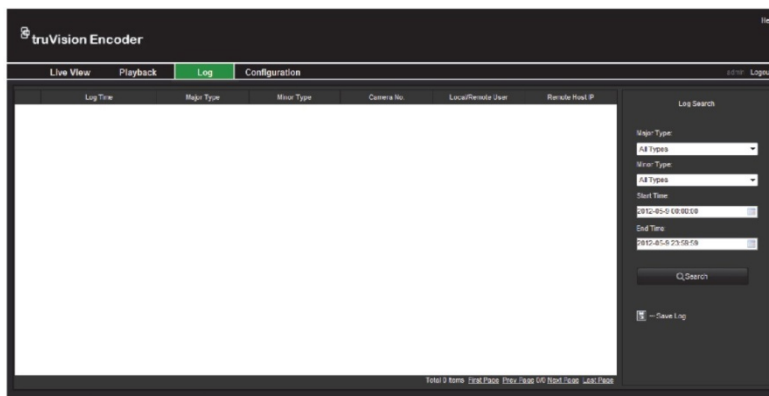
Searching system logs

Many events of the encoder, such as operation, alarms and notifications, are logged into the system logs. They can be viewed and exported at any time.

Note: Connect a NetHDD to the encoder before starting the log search. The network disc must be initialized.

To search system logs:

1. Click the **Log** button on the menu toolbar. The Log window appears.



2. Select the search start and end times.
3. Under **Major Type** and **Minor Type**, select an option from the drop-down list. The minor type list of options available depends on the option selected under major type.
4. Click the **Search** button. A list of results appears in the panel below.
5. Click **Save Log** to save a log file to a local directory.

Restoring default settings

To restore the default factory settings:

1. Click **Configuration > Maintenance**.
2. Click **Restore** or **Default**.

Restore: All parameters except those for IP address, subnet mask, gateway, and server port are restored to factory default settings.

Default: All parameters are restored to factory default settings.

3. Click **OK** to confirm you want to restore default settings.

Viewing device information

You can change the encoder name and number as well as view information about the device such as model and serial numbers, firmware version, encoder version, number of HDDs, and the number of alarm inputs and outputs.

To view device information:

1. Click **Configuration > Device Parameters > Device Information**. The Device Information window appears



The screenshot shows a 'Device Information' window with the following fields and values:

Field	Value
Device Name:	Embedded Encoder
Device No.:	255
Model:	TVE-1600
Serial No.:	TVE-16000120120420AAWR000549111WCVU
Firmware Version:	V3.0.c build 120329
Encode Version:	V5.0 build 120317
Number of Channels:	16
Number of HDDs:	0
Number of Alarm Input:	4
Number of Alarm Output:	1

A 'Save' button is located at the bottom left of the window.

2. Change the device name or number, if required.
3. Click **Save** to save the settings.

Restarting the device

To restart the encoder:

1. Click **Configuration > Maintenance**. The Maintenance window appears.



The screenshot shows a 'Maintenance' window with two main sections: 'Restart' and 'Default'. The 'Restart' section has a 'Restart' button and a text label 'Restart the device.' The 'Default' section has a 'Default' button and a text label 'Restore all parameters to the factory default settings.' The 'Restart' button is highlighted.

2. Click **Restart**.
3. Enter your user name and password and click **OK**. The encoder restarts.

Importing/exporting parameters

The configuration files of the device can be exported to a local back-up device.

The configuration files of one device can be imported to multiple device devices if they are to be configured with the same parameters.

1. Click **Configuration > Maintenance**. The maintenance window appears.



2. To export the files, under *Export Parameters* click **Export**. The files are downloaded to the back-up device.
3. To import files, under *Import Parameters* click **Browse** to locate the file to be imported from a local back-up device. Click **Import** to start importing.

Upgrading the system

The encoder firmware can be upgraded remotely.

To upgrade the encoder:

1. Click **Configuration > Maintenance**. The Maintenance window appears.
2. Under “Remote Upgrade”, click **Browse** to locate the upgrade file from a local back-up device. Click **Upgrade** to start importing.

Specifications

Model	TVE-400	
Video/Audio input	Video compression	H.264
	Analog video input	4-ch, BNC connector (1.0 Vp-p, 75 Ω); PAL / NTSC adaptive
	Audio compression	G.711
	Audio input	1-ch, RCA connector (2 Vp-p, 1 kΩ)
	Bi-directional audio input	1-ch, RCA (2.0 Vp-p, 1 kΩ) (Using AUDIO IN)
	Audio output	1-ch, RCA connector (Linear, 1 kΩ)
Video/Audio output	Recording resolution	4CIF / 2CIF / CIF
	Frame rate	Main stream: 4CIF / 2CIF / CIF @ 25 fps (P) / 30 fps (N) Sub stream: CIF @ 6 fps or QCIF @ 25 fps (P) / 30 fps (N)
	Video bit rate	32 kbps to 2048 kbps, or user-defined (Max. 3072 kbps)
	Stream type	Video/ Video & Audio
	Audio bit rate	64 kbps
	Dual stream	Support
External interface	Network interface	1, RJ45 10 M / 100 M adaptive Ethernet interface
	Serial port	1 RS-485 interface, half-duplex
	Alarm in	4
	Alarm out	1
Others	Protocol	Support CGI, PSIA and ONVIF
	Current	Max. 1 A
	Operating temperature	-10 to +55 C° (14 to 131 °F)
	Operating humidity	10 to 90%
	Dimensions	315 × 45 × 201 mm (12.4 × 1.77 × 7.91 in.)
	Weight	1.4 kg (3.08 lb)

Model	TVE-800	
Video/Audio input	Video compression	H.264
	Analog video input	8-ch, BNC connector (1.0 Vp-p, 75 Ω); PAL / NTSC adaptive
	Audio compression	G.711
	Audio input	1-ch, RCA connector (2 Vp-p, 1 kΩ)
	Bi-directional audio input	1-ch, RCA (2.0 Vp-p, 1 kΩ) (Using AUDIO IN)
	Audio output	1-ch, RCA connector (Linear, 1 kΩ)

Model	TVE-800	
Video/Audio output	Recording resolution	4CIF / 2CIF / CIF
	Frame rate	Main stream: 4CIF / 2CIF / CIF @ 25 fps (P) / 30 fps (N) Substream: CIF @ 6fps or QCIF @ 25 fps (P) / 30 fps (N)
	Video bit rate	32 kbps to 2048 kbps, or user-defined (Max. 3072 kbps)
	Stream type	Video/ Video & Audio
	Audio bit rate	64 kbps
	Dual stream	Support
External interface	Network port	1, RJ45 10 M / 100 M adaptive Ethernet port
	Serial port	1 RS-485 port, half-duplex
	Alarm in	4
	Alarm out	1
Others	Protocol	Support CGI, PSIA and ONVIF
	Current	Max 1.5 A
	Operating temperature	-10 to +55 C° (14 to 131 °F)
	Operating humidity	10 to 90%
	Dimensions	315 × 45 × 201 mm (12.4 × 1.77 × 7.91 in.)
	Weight	1.5 kg (3.3 lb)

Model	TVE-1600	
Video/Audio input	Video compression	H.264
	Analog video input	16-ch, BNC connector (1.0 Vp-p, 75 Ω); PAL / NTSC adaptive
	Audio compression	G.711
	Audio input	1-ch, RCA connector (2 Vp-p, 1 kΩ)
	Bi-directional audio input	1-ch, RCA (2.0 Vp-p, 1 kΩ) (Using AUDIO IN)
	Audio output	1-ch, RCA connector (Linear, 1 kΩ)
Video/Audio output	Recording resolution	4CIF / 2CIF / CIF
	Frame rate	Main stream: 4CIF / 2CIF / CIF @ 25 fps (P) / 30 fps (N) Substream: CIF @ 6 fps or QCIF @ 25 fps (P) / 30 fps (N)
	Video bit rate	32 kbps to 2048 kbps, or user-defined (Max. 3072 kbps)
	Stream type	Video/ Video & Audio
	Audio bit rate	64 kbps
	Dual stream	Support

Model	TVE-1600	
External interface	Network port	1, RJ45 10 M / 100 M adaptive Ethernet port
	Serial port	1 RS-485 port, half-duplex
	Alarm in	4
	Alarm out	1
Others	Protocol	Support CGI, PSIA and ONVIF
	Current	Max 2A
	Operating temperature	-10 to +55 C° (14 to 131 °F)
	Operating humidity	10 to 90%
	Dimensions	315 × 45 × 201 mm (12.4 × 1.77 × 7.91 in.)
	Weight	1.6 kg (3.53 lb)

